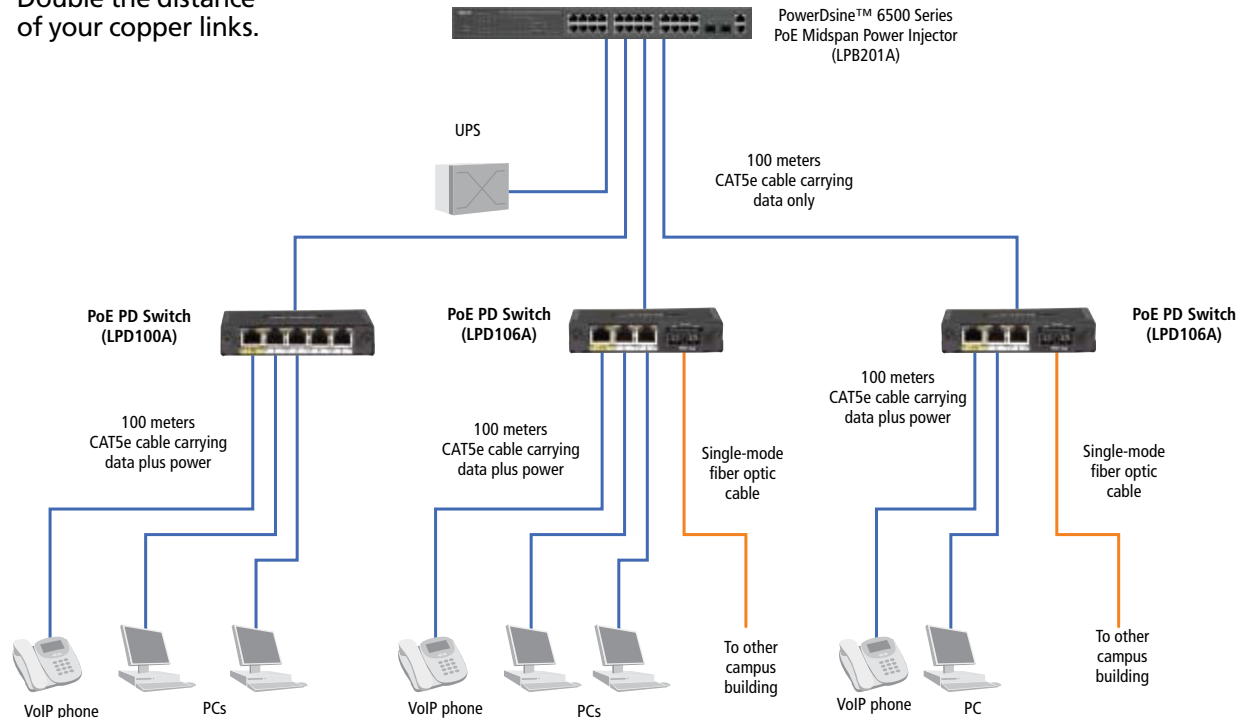## PoE PD Switches

Power over Ethernet plus fiber options make this the perfect switch for your network's edge.

FEATURES

» Use fiber ports to extend your network up to 100 kilometers (62.1 miles).
» **Receive power from a PoE PSE device.**
» **Use copper ports to increase network port density.**
» **Single-strand fiber models transmit and receive on a single fiber, enabling you to maximize use of your fiber infrastructure.**
» **All copper ports are autosensing 10-/100-Mbps Ethernet with MDI/MDI-X on Port #1.**
» **Port #2 supports high-priority VoIP packets.**
» **DiffServ/TOS IP packet prioritization on all ports for QoS prioritization.**
» **Fiber ports provide notification of link loss at the far end of the fiber.**
» **Include broadcast storm protection.**
» **Support 1916-byte packet size.**

Double the distance of your copper links.

PowerDsine™ 6500 Series
PoE Midspan Power Injector
(LPB201A)

UPS

100 meters
CAT5e cable carrying
data only

PoE PD Switch
(LPD100A)

PoE PD Switch
(LPD106A)

PoE PD Switch
(LPD106A)

100 meters
CAT5e cable carrying
data plus power

100 meters
CAT5e cable carrying
data plus power

100 meters
CAT5e cable carrying
data plus power

Single-mode
fiber optic
cable

Single-mode
fiber optic
cable

VoIP phone   PCs

VoIP phone   PCs

To other
campus
building

VoIP phone   PC

To other
campus
building

OVERVIEW

PoE PD Switches are perfect for your network's edge. Unlike most Power over Ethernet (PoE) switches, which are power sourcing equipment (PSEs) that provide power to PoE devices, these switches are powered devices (PDs) and receive their power from a PSE. These switches are an easy way to extend the range of your Ethernet network and increase port density.

Powered by Ethernet

PoE PD Switches receive their power from any PoE PSE device across CAT5 or higher UTP cable. Because they're powered by the same cable that provides their Ethernet connection, installation is simplified and you don't need to worry about having power outlets at remote locations, saving you installation costs.

A wide range of port options

These nimble switches are available with copper ports only or with copper ports plus a fiber uplink. There is even a model with an SFP port that enables you to use SFPs for greater flexibility on the fiber link. One copper port on each switch supports PoE.

Use models with fiber ports to add long-distance fiber links—up to 100 kilometers—to your network. Single-strand fiber models enable you to send and receive over a single fiber strand, so you get more use from your fiber infrastructure.

One port on each switch is for high-priority VoIP, which ensures that voice packets get through first.

A full-featured switch

PoE PD Switches provide the features you're looking for. All copper ports are dual-speed, autosensing 10-/100-Mbps ports. MDI/MDI-X means you never need to worry about having a crossover cable.

Broadcast storm protection (message rate filtering) prevents network downtime by shutting down ports if broadcast or multicast traffic exceeds its threshold.

DiffServ on all ports provides quality of service (QoS) prioritization so crucial network traffic gets through first.

Link Loss on all fiber ports notifies you if the fiber link fails.

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Technically Speaking

Power over Ethernet (PoE).

The seemingly universal network connection, twisted-pair Ethernet cable, has another role to play, providing electrical power to low-wattage electrical devices. Power over Ethernet (PoE) was ratified by the Institute of Electrical and Electronic Engineers (IEEE) in June 2000 as the 802.3af-2003 standard. It defines the specifications for low-level power delivery—roughly 13 watts at 48 VDC—over twisted-pair Ethernet cable to PoE-enabled devices such as IP telephones, wireless access points, Web cameras, and audio speakers.

The way it works is simple: Ethernet cable that meets CAT5 (or better) standards consists of four twisted pairs of cable, and PoE sends power over these pairs to PoE-enabled devices. In one method, two wire pairs are used to transmit data, and the remaining two pairs are used for power. In the other method, power and data are sent over the same pair.

When the same pair is used for both power and data, the power and data transmissions don't interfere with each other. Because electricity and data function at opposite ends of the frequency spectrum, they can travel over the same cable.

Electricity has a low frequency of 60 Hz or less, and data transmissions have frequencies that can range from 10 million to 100 million Hz.

There are two types of devices involved in PoE configurations: Power Sourcing Equipment (PSE) and Powered Devices (PD).

PSEs, which include end-span and mid-span devices, provide power to PDs over the Ethernet cable. An end-span device is often a PoE-enabled network switch that's designed to supply power directly to the cable from each port. The setup would look something like this:

A mid-span device is inserted between a non-PoE device and the network, and it supplies power from that juncture. Here is a rough schematic of that setup:

Power injectors, a third type of PSE, supply power to a specific point on the network while the other network segments remain without power.

PDs are devices like switches, surveillance cameras, sensors, wireless access points, and any other devices that operate on PoE.

LPD100A

LPD101A

Back view: LPD105A

TYPICAL APPLICATIONS

- Use one set of twisted-pair wires for both data and power.
- Save money by eliminating the need to run electrical wiring.
- Quickly set up a temporary workgroup.
- If your LAN is protected from power failure by a UPS, the PoE PD Switches connected to your LAN are also protected from power failure.
- Use the switch increase the range of your copper network by enabling you to add up to another 100 meters of UTP cabling.

TECH SPECS

Standards — IEEE 802.3x, IEEE 802.3u, IEEE 802.3af
CE Approval — Yes
Environmental — Operating temperature: +32 to +122° F (0 to +50° C);
    Storage temperature: -13 to +158° F (-25 to +70° C);
    Humidity: 5% to 90% noncondensing
Power — Inline PoE Power injector
Size — 1.6"H x 4.8"W x 7.3"D (4.1 x 12.2 x 18.5 cm)
Weight — 1.8 lb. (0.8 kg)

Item	Code
PoE PD Switches	
(5) 10/100BASE-T	**LPD100A**
(4) 10/100BASE-T plus (1) SFP Slot	**LPD101A**
(3) 10/100BASE-T plus	
(1) 100BASE-SX, Multimode, 850-nm	
300 m, ST®	**LPD102A**
300 m, SC	**LPD103A**
(3) 10/100BASE-T plus (1) 100BASE-SX, Multimode, 1300-nm	
2 km, ST	**LPD104A**
2 km, SC	**LPD105A**
(3) 10/100BASE-T plus (1) 100BASE-SX, Single-Mode 1310-nm	
40 km, ST	**LPD106A**
40 km, SC	**LPD107A**
80 km, ST	**LPD108A**
80 km, SC	**LPD109A**
100 km, SC	**LPD110A**
(3) 10/100BASE-T plus	
(1) Single-Strand 100BASE-FX, Single-Mode	
20 km, SC *(Order one of each.)*	
1310-nm TX/1550-nm RX	**LPD111A**
1550-nm TX/1310-nm RX	**LPD112A**
40 km, SC *(Order one of each.)*	
1310-nm TX/1550-nm RX	**LPD113A**
1550-nm TX/1310-nm RX	**LPD114A**
60 km, SC *(Order one of each.)*	
1310-nm TX/1550-nm RX	**LPD115A**
1550-nm TX/1310-nm RX	**LPD116A**

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